



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Metropolitan Boston – Northeast Regional Office

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EDWARD P. KUNCE
Acting Commissioner

MODIFIED WATER WITHDRAWAL PERMIT
MGL c 21G

This Modified Permit is issued pursuant to the Massachusetts Water Management Act (the “Act”) for the sole purpose of modifying the terms and conditions governing the withdrawal of water authorized herein. This Modified Permit conveys no right in or to any property beyond the right to withdraw the volume of water for which it is issued.

PERMIT NUMBER: 9P2-3-17-320.01

RIVER BASIN: Ipswich

PERMITTEE: Town of Wenham
91 Grapevine Road
Wenham, MA 01984

ORIGINAL ISSUANCE DATE: May 7, 1997

MODIFICATION DATE: May 19, 2003

EXPIRATION DATE: August 31, 2009

NUMBER OF WITHDRAWAL POINTS: 2 Groundwater Points

USE: Public Water Supply

DAYS OF OPERATION: 365

LOCATIONS:

<u>Source</u>	<u>Source Code</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Location</u>
Gravel Pack #1	3320000-01G			Pleasant Street
Gravel Pack #2	3320000-01G			Pleasant Street

This information is available in alternate format. Call Aprel McCabe, ADA Coordinator at 1-617-556-1171.

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SPECIAL CONDITIONS

1. Maximum Authorized Annual Average Withdrawal Volume

This Modified Permit authorizes the withdrawal of water for the purpose of serving the businesses, schools, municipal facilities, institutions and residences in the Town of Wenham (the “Town” or “Wenham”), at the rate described below on average over a calendar year. The volume reflected by this rate is in addition to the 0.29 million gallons per day (MGD) previously registered to the permittee through the Water Management Act Program. The Department will use raw water volumes when assessing compliance with the volumes authorized by the Town’s Registration and this Modified Permit.

The permitted volume is expressed in millions of gallons, both as an average daily withdrawal rate per year and as a total annual withdrawal volume for each period of the Modified Permit.

Withdrawals are authorized as follows:

		Daily Average (MGD)	Total Annual (MGY)
Period Two			
Years 8-10	5/7/1997 to 8/31/1999	0.10	40.15
Period Three			
Years 11-15	9/1/1999 to 5/18/2003	0.11	40.15
Period Four			
Years 16-20	5/19/2003 to 8/31/2009	0.10*	40.15

The Town’s actual withdrawal volumes have been below the volumes originally allocated. In addition, there is insufficient water available in the Ipswich River Basin at this time to support increased withdrawals. In these circumstances the Department held the Town’s permitted withdrawal volumes to the volume originally allocated for Period Two.

If, for any year beginning with calendar year 2004, the Town exceeds its total authorized volume of 0.40 MGD on an average annual daily basis, on or before March 1st of the following year, the Town shall submit to the Department for its review and approval a plan and schedule for implementing a water bank. Thereafter, the Town shall implement the water bank as approved by the Department.

At a minimum, this water bank shall provide for keeping at least two gallons of water within the basin for every gallon of water demand added to the system. This water bank requirement applies, even if the Town exceeds its total authorized volume on an average annual daily basis by an amount that is less than the threshold volume. If Wenham exceeds its total authorized volume on an average annual daily basis by more than the threshold volume, the Town will be in violation of the Water Management Act and this Modified Permit.

2. Maximum Authorized Daily Withdrawal Volume

Withdrawals from individual withdrawal points are not to exceed the approved maximum daily volume listed below without specific advance written approval from the Department.

Source	Source Code	Daily Rate in Million Gallons per Day (MGD)
Gravel Pack #1	3320000-01G	0.40
Gravel Pack #2	3320000-01G	1.08

3. Zone of Contribution (Zone II or Zone III) Delineations

Department records show that all the wells listed in this Modified Permit have DEP-approved Zone II delineations. Therefore, no further Zone II work is required as a condition of this Modified Permit.

4. Wellhead Protection

Department records show that the Town has enacted land use controls and water supply protection measures that comply with the requirements of 310 CMR 22.21(2). Therefore, no additional wellhead protection is required as a condition of this Modified Permit.

5. Wetlands and Surface Water Monitoring

As required by Special Condition #5 of the original permit #9P2-3-17-320.01, the Town has performed wetland, vernal pools, and surface water monitoring. Reports were submitted to the Department for the years 2002, 2000, 1999, and 1998. The vegetative monitoring portion of this work has not shown significant changes in the wetland plots. However, changes have been observed to the water levels in Pleasant Pond that may be connected to pumping volumes at the Pleasant Street wells. Information should be provided to document the previous assessment of the vernal pools and determine if additional monitoring is required. A monitoring plan should be developed to continue and better assess potential impacts of water withdrawals upon Pleasant Pond and Idlewood Brook. These items shall be submitted to the Department by December 31, 2003, and shall, at a minimum, include the following:

- a. A plan showing the location of all monitoring locations including vernal pool locations;
- b. A copy of the 2001 monitoring report;
- c. Documentation of the reason for having discontinued the monitoring of vernal pool "Designation 6", the quaking bog. A discussion of potential impacts at this location from water withdrawals shall be included. DEP notes that Conservation Commission designated this location as a "unique habitat" which requires being maintained wet;
- d. A written qualitative report discussing the monitoring method for the vernal pools and any observed changes over the monitoring period;
- e. A plan to determine the impact of the withdrawal on water levels and uses at Pleasant Pond including, but not limited to recreational uses (Town Beach) and fishing (DFW stocked pond). This should include a determination of any correlation among pumping rates, pond levels, recharge, and other seasonal variations. Please note that the 200 series wells are screened in the marine clay confining bed, and may not be an appropriate monitoring location.

6. Streamflow Triggers and Outside Water Use Restrictions

Beginning on June 1, 2003, the Town shall implement the Required Actions identified in the following table whenever streamflow falls below the levels identified for three (3) consecutive days as measured at the USGS Stream Gauge noted.

Period	Streamflow Trigger (3 consecutive days below threshold)	Flow Volume (USGS Ipswich Gauge Station 01102000)*	Required Action
May 1 st thru September 30 th	<0.56 cfsm	<70.0 cfs	Public Notice for Voluntary Water Restrictions
May 1 st thru September 30 th	< 0.42 cfsm	<52.5 cfs	Implementation of Mandatory Water Restrictions

cfsm = cubic feet per second per square mile

cfs = cubic feet per second

* The streamflow thresholds set forth above are the mean daily streamflow recorded at the applicable USGS gauge. Should the reliability of flow measurements at the Ipswich Gauge Station be so impaired as to question its accuracy, the Modified Permit holder may request for the Department review and approval that the trigger mechanism be transferred to the USGS South Middleton Gauge #01101500. The implementation of restrictions will be triggered by the same cfsm values that translate to a flow of 24.9 cfs for voluntary restrictions, and 18.7 cfs for mandatory restrictions. Should the Department become aware of concerns about the reliability of either gauge, it may upon immediate notification to the Modified Permit holder transfer the measurement point to an alternate gauge. The Department reserves the right to require use of a different gauge.

Required Actions, voluntary and mandatory restrictions, require the filing of a public notice in a local newspaper within 5 business days of the date that the required action is triggered. A copy of each notice as published shall be forwarded to the Department within 10 business days of publication. Each notice shall at a minimum include:

1. the streamflow value that triggered the required notification;
2. the need to limit water use, especially nonessential outside water use, to protect streamflow for aquatic life and to ensure a sustainable drinking water supply;
3. ways individual homeowners can limit water use, especially nonessential outside water use;
4. in the case of mandatory restrictions, a detailed description of the restrictions and the penalties for violating the restrictions.

At a minimum, the mandatory restrictions shall limit nonessential outside water use to hand held hoses only and include hourly restrictions on nonessential outside water use. At a minimum, hourly restrictions shall avoid water use during the hours 9 a.m. to 5 p.m. when evapotranspiration rates are typically the highest. Notwithstanding the foregoing, irrigation of public parks and recreational fields by means of automatic sprinklers equipped with moisture sensors or similar control technology may also be permitted outside the hours of 9 a.m. to 5 p.m. For purpose of this Modified Permit, the term nonessential outside water use is defined to include those uses that do not have health or safety impacts, are not required by regulation and are not needed to meet the core functions of a business or other organization. The Town shall have the authority to enforce mandatory restrictions, including the authority to assess penalties or impose fines for violations.

The Town shall implement, and in the case of mandatory restrictions, enforce the restrictions until streamflow exceeds, for seven (7) consecutive days, the applicable streamflow threshold set forth in the table above.

In order to evaluate the effectiveness of the restrictions on nonessential outside water use, the Department requires that the Town submit with the Annual Statistical Report, a report documenting all actions taken by the Town to implement and enforce the restrictions on nonessential outside water use, including without limitation the dates the restrictions on nonessential outside water use were in place, the streamflow

threshold that triggered the restrictions, the restrictions imposed, and the Town's efforts to enforce the restrictions, including the names and addresses of those against whom action was taken and any fines or penalties imposed.

7. Ipswich River Basin Performance Standards

Beginning calendar year 2004, Wenham shall meet the following performance standards ("the Ipswich River Basin Performance Standards").

Performance Standard for Unaccounted for Water

Unaccounted for water shall not exceed 10% of overall water use.

Wenham's Annual Statistical Report shall provide a detailed assessment of its unaccounted for water. Unaccounted for water is defined by the Massachusetts Water Resources Commission as the difference between water pumped or purchased and water that is metered or confidently estimated. Unaccounted for water shall include water that cannot be accounted for due to meter problems, unauthorized hydrant openings, unavoidable leakage, recoverable leakage, illegal connections, stand pipe overflows and fire protection.

The need for water main flushing and the use of water in construction or meter calibration shall be metered or estimated as appropriate to assist in determining actual demand. Volumes flushed to waste shall be reported on the Town's Water Supply Annual Statistical Report.

Performance Standard for Residential Per Capita Water Use

Residential Per Capita Water Use shall not exceed 65 gallons per day.

Wenham shall report its residential gallons per capita per day (rgpcd) and the calculation used to derive that figure as part of its Annual Statistical Report. The rgpcd is the total volume of residential water use in gallons divided by the population served. The source of the data used to establish the service population and the year in which this data was developed shall be provided. If Wenham fails to meet the performance standard for keeping residential per capita water use at or below 65 gallons per day, the Department may require the Town to implement restrictions on outside water use that are more stringent than the restrictions set forth in Special Condition #6.

Performance Standard for Seasonal Water Use

Water use between May 1st and September 30th shall not exceed the seasonal cap of 61.2 million gallons. To stay within this cap, Wenham shall keep its water use at or below an average daily volume of .40 MGD from May 1st thru September 30th. If the Town exceeds this seasonal cap, the Department may require the Town to implement more stringent restrictions on nonessential outside water use than those set forth in Special Condition #6.

Performance Standard for Restricting the Use of Unregulated Irrigation Wells

The Department has been informed that within the Ipswich River Basin there has been an increase in the number of wells that are not subject to regulation under the Water Management Act and are used in whole or in part for irrigation purposes (hereinafter "unregulated irrigation wells"). To avoid a further increase in the number of such wells, the Department determined that because of the stressed nature of the Ipswich River Basin, it is appropriate that the communities located in the Ipswich River Basin make the use of unregulated irrigation wells subject to the restrictions on nonessential outside water use that are triggered by streamflow thresholds, that are required by this Modified Permit, and that apply to customers of the public water system.

The Department requires that the Town submit, with the Annual Statistical Report, a report documenting all actions taken by the Town to make unregulated irrigation wells subject to the restrictions on nonessential outside water use triggered by streamflow thresholds, that are required by this Modified Permit, and that apply to customers of the public water system, including any actions taken to enforce these restrictions against the owners or operators of unregulated irrigation wells and any fines or penalties imposed. If, in any calendar year beginning with 2005, Wenham, on or before May 1st of that year, fails to restrict the use of unregulated irrigation wells as provided herein, the Town shall implement and enforce the restrictions on nonessential outside water use triggered by the streamflow thresholds set forth below in place of the streamflow thresholds set forth in Special Condition #6.

Period	Streamflow Trigger (3 consecutive days below threshold)	Flow Volume (USGS Ipswich Gauge Station 01102000)	Required Action
May 1 st thru September 30 th	< 0.56 cfs ^m	< 70.0 cfs	Public Notice for Voluntary Water Restrictions
May 1 st thru September 30 th	<0.42 cfs ^m	< 52.5 cfs	Implementation of a Total Ban on Nonessential Outside Water Use

cfs^m = cubic feet per second per square mile

cfs = cubic feet per second

8. Enhanced Water Conservation Plan

If, in any year beginning with calendar year 2004, Wenham fails to comply with the Performance Standards for Residential Per Capita Water Use and/or Seasonal Water Use, the Town shall develop and implement an enhanced water conservation plan for the following calendar year. For any year in which the Town is required to develop and implement an enhanced water conservation plan, the Town shall submit, with the Annual Statistical Report, a report documenting all actions taken by the Town to develop and implement the enhanced water conservation plan.

The enhanced water conservation plan may include without limitation the items listed below:

- Adoption and enforcement of a bylaw or other regulation to require moisture sensors or similar control technology on automatic sprinklers;
- Adoption and enforcement of a bylaw or other regulation to limit the amount of land clearing for the creation of lawns;
- Adoption and enforcement of a bylaw or other regulation to promote infiltration of stormwater to recharge groundwater at a rate of 1.5 times the volume of recharge for new development projects and a rate of 1.0 times the volume of recharge for redevelopment projects for the appropriate hydrologic group as identified in Standard 3 of the DEP Stormwater Management Standards;
- Irrigation of recreational fields and parks in accordance with the Water Resource Commission's May 2002 Guide to Lawn and Landscape Water Conservation;
- Encouragement of the use of cisterns or rain barrels for outside watering thru the use of a rebate or at cost program;
- Enhanced public education outreach; and/or
- Purchase and/or development of out-of-basin sources.

At a minimum, the enhanced water conservation plan shall meet the requirements set forth below.

- If Wenham fails to comply with the performance standard for keeping residential per capita water use at or below 65 gallons per day, the enhanced water conservation plan shall include the implementation of a program to make water saving devices such as faucet aerators, low flow shower heads and toilet displacement bottles/dams available to its customers at cost and to provide rebates or other incentives for the purchase of low flow appliances (washing machines, dish

washers and toilets), and the installation of moisture sensors or similar control technology on irrigation systems.

- Any enhanced water conservation plan required by this Modified Permit shall include (1) submission of a report that evaluates the effectiveness of a seasonal rate as a tool for encouraging water conservation, (2) implementation of any changes to the current rate structure that will enable the Town to encourage water conservation, and (3) notification to the Department of the changes along with the reason for these changes.

9. Control of Unaccounted for Water

At a minimum, the Town shall implement the actions listed below to meet the performance standard of having unaccounted for water at or below 10%.

Metering

The Town shall accelerate its ongoing program to replace 15 individual service meters per year. On or before December 31, 2000, the Town shall submit to the Department a plan and schedule for accelerating its meter replacement program and for ensuring that all service meters accurately measure within 2 % the volume of water used by the Town's customers. At a minimum, the plan shall include the provisions of sufficient funds in the annual Water Department budget to recalibrate, repair or replace meters as needed. Thereafter, the Town shall implement the program.

The Town shall continue to calibrate all master meters on an annual basis.

Leak Detection

At a minimum, the Town shall continue to conduct a full leak detection survey every three years. In addition, the Town shall perform a leak detection survey of its entire distribution system whenever the volume of unaccounted for water is greater than 10% of overall water use or whenever the percentage of unaccounted for water increases by 5% or more (for example an increase from 3% to 9%) over the percentage reported on its Annual Statistical Report for the prior calendar year. On or before December 31 of any calendar year in which a leak detection survey takes place, the Town shall submit to the Department for its review a report detailing the leak detection survey, any leaks uncovered as a result of the survey or otherwise, and the estimated water savings as a result of the repair.

Leak Repair

The Town shall have repair reports available for inspection by the Department.

Leaks shall be repaired as soon as possible including leaks in any water pipes up to the service meter. In no event, shall any leak remain unrepaired for more than seven (7) days after detection.

The Town shall repair the current leak of 1 gpm located on Cedar Street and notify the Department in writing that the repair has been fixed on or before December 31, 2003.

10. Reporting Requirements

Wenham shall report on the Annual Statistical Report both the raw water volumes and finished water volumes for the entire water system. By December 31, 2005, or upon meter replacement, the Pleasant Street wells shall be metered individually and Raw water volumes shall also be reported for individual sources.

11. Commercial and Industrial Conservation Program

The Town shall implement a program to reduce water use by its ten largest industrial and commercial customers. On or before March 1, 2005, the Town shall report on the effectiveness of this program. Upon receipt of this program, the Department will take whatever action it deems appropriate to promote the interests of the Water Management Act including without limitation modification of this Modified Permit to require additional actions to reduce commercial and industrial water use.

12. General Conservation Requirements

Pricing

The Town shall continue to ensure that water supply system operations are fully funded by water supply system revenues. The pricing system should at least reflect the full cost of supplying water, including but not limited to:

- Administrative costs;
- Staff salaries, benefits, insurance and pension costs;
- Distribution system operation, maintenance and repair, including leak detection and repair costs and metering costs;
- Pumping costs and utilities;
- Treatment costs;
- Capital replacement costs, capital depreciation and debt service;
- Costs incurred by the public water system for water conservation programs and public education programs;
- Watershed or wellhead purchase and/or protection costs and land acquisition; and,
- Emergency planning.

Plumbing

The Town shall enforce the March 1, 1989, plumbing code for new construction and building rehabilitation requiring installation of water saving devices and low flow toilets.

The Town has informed the Department that most public buildings have been retrofitted with water saving devices.

On or before December 31, 2003, the Town shall provide an inventory of all public buildings and facilities with the date that the building/facility has been retrofitted with water saving devices. The inventory shall identify any public buildings that have not yet been retrofitted with water saving devices and provide a schedule for completing the retrofit by July 1, 2005. Thereafter, the Town shall complete the retrofit of all public buildings in accordance with the schedule.

On or before July 1, 2005, the Town shall complete the retrofit of all public buildings and notify the Department in writing that the retrofit is complete.

Education

The Town shall continue its current public education program and consider additional educational activities. The Town shall also continue to provide customers of the public water system with data emphasizing:

- all the costs of providing water;
- that investments in efficiency and conservation will provide consumers with long-term savings;
- how water use fluctuates throughout the year;
- the environmental benefits of conserving water.

Bill stuffers with water conservation tips or water saving messages shall, at a minimum, be included annually with customer's water bills, or as a separate mailing. Copies of this information shall be made available to the Department upon request.

GENERAL CONDITIONS

1. **Duty to Comply** The permittee shall comply at all times with the terms and conditions of this Modified Permit, the Act and all applicable State and Federal statutes and regulations.
2. **Operation and Maintenance** The permittee shall at all times properly operate and maintain all facilities and equipment installed or used to withdraw up to the authorized volume so as not to impair the purposes and interests of the Act.
3. **Entry and Inspections** The permittee or the permittee's agent shall allow personnel or authorized agents or employees of the Department to enter and examine any property for the purpose of determining compliance with this Modified Permit, the Act or the regulations published pursuant thereto, upon presentation of proper identification and an oral statement of purpose.
4. **Water Emergency** Withdrawal volumes authorized by this Modified Permit are subject to restriction in any water emergency declared by the Department pursuant to MGL c 21G ss 15-17, MGL c 150 ss 111, or any other enabling authority.
5. **Transfer of Permits** This Modified Permit shall not be transferred in whole or in part unless and until the Department approves such transfer in writing, pursuant to a transfer application on forms provided by the Department requesting such approval and received by the Department at least thirty (30) days before the effective date of the proposed transfer. No transfer application shall be deemed filed unless it is accompanied by the applicable transfer fee established by 310 CMR 36.37.
6. **Duty to Report** The permittee shall submit annually, on a form provided by the Department (the Annual Statistical Report), a certified statement of the withdrawal, such report to be received by the Department by February 28th of each year. Such report must be mailed or hand delivered to:

Department of Environmental Protection
Water Management Program
One Winter Street, 6th Floor
Boston, MA 02108
7. **Duty to Maintain Records** The permittee shall be responsible for maintaining monthly withdrawal records.
8. **Metering** All withdrawal points included within the Modified Permit shall be metered individually by December 31, 2005. Meters shall be calibrated annually

APPEAL RIGHTS AND TIME LIMITS

This permit modification is a decision of the Department. Any person aggrieved by this decision may request an adjudicatory hearing under the provisions of M.G.L. c. 30A. Any such request must be made in writing, by certified mail and received by the Department within twenty-one (21) days of the date of receipt of this Modified Permit. Only the portions of the Modified Permit that reflect a modification of the Town's current permit may be the subject of an appeal, since the appeal period for appealing provisions within the Town's current permit has expired.

No request for an appeal of this Modified Permit shall be validly filed unless a copy of the request is sent by certified mail, or delivered by hand to the local water resources management official in the city or town in which the withdrawal point is located; and for any person appealing this decision, who is not the permit holder, unless such person notifies the permit holder of the appeal in writing by certified mail or by hand within five (5) days of mailing the appeal to the Department.

CONTENTS OF HEARING REQUEST

310 CMR 1.01(6)(b) requires the request to include a clear and concise statement of the facts which are the grounds for the request and the relief sought. For any person who is not the permit holder, the request must include a clear and concise statement of how that person is aggrieved by the issuance of this Modified Permit.

FILING FEE AND ADDRESS

The hearing request, together with a valid check, payable to the Commonwealth of Massachusetts in the amount of \$100 must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, Ma. 02211

The request shall be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

EXEMPTIONS

The filing fee is not required if the appellant is a city or town (or municipal agency), county, district of the Commonwealth of Massachusetts, or a municipal housing authority.

WAIVER

The Department may waive the adjudicatory hearing filing fee for any person who demonstrates to the satisfaction of the Department that the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request, an affidavit setting forth the facts which support the claim of undue hardship.

NO WITHDRAWAL AUTHORIZED HEREIN SHALL EXCEED THE SAFE YIELD OF THE BASIN AS DETERMINED BY THE DEPARTMENT.

NO WITHDRAWAL IN EXCESS OF 100,000 GALLONS PER DAY OVER THE REGISTERED VOLUME (if any) SHALL BE MADE FOLLOWING THE EXPIRATION OF THIS MODIFIED PERMIT, UNLESS BEFORE THAT DATE THE DEPARTMENT HAS RECEIVED A RENEWAL PERMIT APPLICATION PURSUANT TO 310 CMR 36.00.